APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/038,259	01/02/2002	Anna Charny	CISCP731	7467

26541	7590	03/31/2006	

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EXAMINER
SERRAO, RANODHI N

ART UNIT	PAPER NUMBER
2141	

DATE MAILED: 03/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 February 2006*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-12,14-16,18-25 and 27-32* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-12,14-16,18-25 and 27-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 February 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

    1.☐ Certified copies of the priority documents have been received.

    2.☐ Certified copies of the priority documents have been received in Application No. _____.

    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 10\12\05

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

DETAILED ACTION

Status of Claims

1.   With entry of amendments filed on 02 February 2006, claims 1, 3-12, 14-16, 18-

25, and 27-32 are now pending.

Response to Arguments

2.   Applicant's arguments filed 02 February 2006 have been fully considered but

they are not persuasive.

3.   The applicant argued that Kodialam fails to teach "wherein said bandwidth to be

protected of said link pair comprises a lesser of primary bandwidths of links of said link

pair." However Kodialam teaches sharing of the backup bandwidths belonging to

different demands in ¶ 30 **and partial backup** path in ¶ 40. Emphasis added.

Therefore if there are different demands and partial backup then the partial backup

means that the bandwidth must be less than the primary bandwidths of links.

4.   Furthermore the applicant argued that the system of Kodialam fails to reserve

additional backup if certain conditions are met. The examiner points to ¶ 48 wherein

Kodialam teaches "dynamic backup routing determines the active and backup path for

the current NTP request that "optimizes" the use of network infrastructure based **upon a**

specified criterion." Emphasis added. Along with teaching inter-demand sharing and

intra-demand sharing in ¶ 30, Kodialam clearly teaches reserving additional backup if

certain conditions are met.

5.   The applicant also argued that Kodialam fails to teach wherein there is at least

one set of backup tunnels that protect disparate nodes and that consume more

bandwidth on at least one link than provided by said at least one link's backup

bandwidth pool. The examiner points ¶ 60-61, wherein Kodialam states that when some

other link l(k,l) on the active path wants to use link l(u, v) for its backup path, then, **in**

addition to any inter-demand sharing, this other link may use the already reserved

bandwidth of w units on link l(u, v) for "free." Emphasis added. This means that it is

consuming more bandwidth on at least one link than provided. In conclusion, Kodialam

teaches the invention as claimed.

6.   The examiner points out that the pending claims must be "given the broadest

reasonable interpretation consistent with the specification" [In re Prater, 162 USPQ 541

(CCPA 1969)] and "consistent with the interpretation that those skilled in the art would

reach" [In re Cortright, 49 USPQ2d 1464 (Fed. Cir. 1999)]. In conclusion, upon taking

the broadest reasonable interpretation of the claims, the cited references teach all of the

claimed limitations. And the rejections are maintained. See below.

Claim Rejections - 35 USC § 103

7.   The text of those sections of Title 35, U.S. Code not included in this action can

be found in a prior Office action.

8.   Claims 1, 3-12, 14-16, 18-25, and 27-32 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Kinoshita et al. (2002/0172149) and Kodialam et al.

(2002/0067693).

9.   As per claims 1, 12, 16, and 25, Kinoshita et al. teaches in a data communication network, a method for protecting a node (paragraph 0002), said method comprising processes of: providing a backup bandwidth pool on links of said data communication network (paragraph 0073); identifying a link pair traversing said node, said link pair having a bandwidth to be protected (paragraph 0067); establishing as a backup for said link pair a set of one or more paths that do not include said node (paragraph 0073) and wherein said one or more paths collectively have backup bandwidth greater than or equal to said bandwidth to be protected (paragraph 0012); deducting, for each link included in said set of paths, from backup bandwidth available for protecting said node, while not deducting from backup bandwidth available for protecting other nodes in said data communication network (paragraph 0116); and repeating said processes of identifying, establishing, and deducting for a plurality of link pairs traversing said node without exceeding available backup bandwidth of links used in establishing said backups (paragraph 0126). But fails to teach wherein said bandwidth to be protected of said link pair comprises a lesser of primary bandwidths of links of said link pair. However, Kodialam et al. teaches wherein said bandwidth to be protected of said link pair comprises a lesser of primary bandwidths of links of said link pair (see Kodialam et al, paragraph 33). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kinoshita et al. to wherein said bandwidth to be protected of said link pair comprises a lesser of primary bandwidths of links of said link pair in order to employ a local restoration model to determine the allocation of, and, in operation, to switch between, a primary (also termed active) path and a secondary (also

termed backup) path based upon detection of a network failure (see Kodialam et al., paragraph 0014).

10.   As per claims 4, 19, and 28, Kinoshita et al. teaches a method wherein said set of one or more paths comprises one or more label switched paths (paragraph 0156).

11.   As per claim 5, Kinoshita et al. teaches a method wherein said processes of identifying and establishing occur under control of said node (paragraph 0024).

12.   As per claims 7, 20, and 29, Kinoshita et al. teaches a method further comprising: signaling said backups to other nodes adjacent to said node in said data communication network (paragraph 0068).

13.   As per claims 3, 14, 18, and 27, Kinoshita et al. and Kodialam et al. teach the mentioned limitations of claims 1, 12, 16, and 25 above but Kinoshita et al. fails to teach a method wherein said bandwidth to be protected of said link pair comprises a total bandwidth of LSPs employing said link pair. However, Kodialam et al. teaches a method wherein said bandwidth to be protected of said link pair comprises a total bandwidth of LSPs employing said link pair (see Kodialam et al., paragraph 0032). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kinoshita et al. to a method wherein said bandwidth to be protected of said link pair comprises a total bandwidth of LSPs employing said link pair in order to guarantee minimum bandwidth for the path of a packet flow through the network (see Kodialam et al., paragraph 0008).

14.   As per claim 6, Kinoshita et al. and Kodialam et al. teach the mentioned limitations of claim 1 above but Kinoshita et al. fails to teach a method wherein said processes of identifying and establishing occur under control of a computer independent of said node. However, Kodialam et al. teaches a method wherein said processes of identifying and establishing occur under control of a computer independent of said node (see Kodialam et al., paragraph 0073). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kinoshita et al. to a method wherein said processes of identifying and establishing occur under control of a computer independent of said node in order to route data through a network having a plurality of nodes interconnected by a plurality of links represented by a graph (see Kodialam et al., paragraph 0015).

15.   As per claims 8, 15, 21, and 30, Kinoshita et al. teaches a method for operating a data communication network to provide protection to nodes in said data communication network, said method comprising: maintaining, for each of a plurality of links in said data communication network, a primary bandwidth pool and a backup bandwidth pool (see Kinoshita et al., paragraph 0073); and establishing backup nodes to protect a plurality of nodes of said network (see Kinoshita et al., paragraph 0156), each of said backup nodes consuming backup bandwidth from backup bandwidth pools of selected ones of said plurality of links (see Kinoshita et al., paragraph 0012); and wherein all backup protecting any particular node of said network do not consume more bandwidth on any link than provided by the link's backup bandwidth pool (see Kinoshita et al., paragraph 0116). But fails to teach backup tunnels and wherein there is at least one set of backup

tunnels that protect disparate nodes and that consume more bandwidth on at least one

link than provided by said at least one link's backup bandwidth pool. However, Kodialam

et al. teaches backup tunnels (see Kodialam et al., paragraph 0024) and wherein there

is at least one set of backup tunnels that protect disparate nodes (see Kodialam et al.,

paragraph 0030) and that consume more bandwidth on at least one link than provided

by said at least one link's backup bandwidth pool (see Kodialam et al., paragraph 0060).

It would have been obvious to one having ordinary skill in the art at the time of the

invention to modify Kinoshita et al. to backup tunnels and wherein there is at least one

set of backup tunnels that protect disparate nodes and that consume more bandwidth

on at least one link than provided by said at least one link's backup bandwidth pool in

order to allow all nodes in the network to have partial network information available to its

routing algorithm (see Kodialam et al., paragraph 0032).

16.   As per claims 9, 10, 22, 23, 31, and 32, the above-mentioned motivation of claim

8 applies fully in order to combine Kinoshita et al. and Kodialam et al.

17.   As per claims 9, 22, and 31, Kinoshita et al. and Kodialam et al. teach a method

wherein at least one of said backup tunnels comprises a label switched path (see

Kinoshita et al., paragraph 0156).

18.   As per claims 10, 23, and 32, Kinoshita et al. and Kodialam et al. teach a method

wherein establishing backup tunnels comprises: signaling said backup tunnels to

adjacent nodes of each protected node (see Kinoshita et al., paragraphs 0068 and

0156).

19.   As per claims 11 and 24, Kinoshita et al. teaches the mentioned limitations of claims 8 and 21 above but fails to teach a method wherein establishing backup tunnels comprises: performing backup tunnel selection computations at each protected node for that protected node. However, Kodialam et al. teaches a method wherein establishing backup tunnels comprises: performing backup tunnel selection computations at each protected node for that protected node (see Kodialam et al. paragraph 0028). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kinoshita et al. to a method wherein establishing backup tunnels comprises: performing backup tunnel selection computations at each protected node for that protected node in order to reserve link bandwidth and establish an NTP (see Kodialam et al., paragraph 0008).

Conclusion

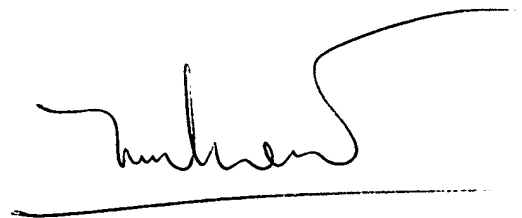THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ranodhi Serrao whose telephone number is (571)272-7967. The examiner can normally be reached on 8:00-4:30pm, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on (571)272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

THIEN LUU
EXAMINER